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# National climate change policies and WTO law: a case study of Germany's new policies

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**Abstract:** This article analyses the relationship between national climate change policy instruments and WTO rules with particular emphasis on the case of Germany. Our main finding is that national policies whose aim is to reduce greenhouse gases can be brought into compliance with international trade law. Compliance can be achieved, first, through various methods of labelling electricity from renewable resources. Second, it can be achieved through trading systems for green certificates that respect basic WTO principles. Third, it can be achieved through energy taxes. To offset the competitive impacts of such taxes, border tax adjustments are a possibility. Although WTO law has not yet clearly defined the eligibility of border tax adjustments for energy taxes, the balance of evidence suggests that it would support such adjustments under certain circumstances. Fourth, compliance with WTO rules can be achieved through financial incentives to the producers of energy from renewable sources which are conferred in such a way that they do not pass through the hands of the government. Hence, climate change policies can even rely on ‘subsidies’ (in the economic sense) without getting into conflict with WTO rules. Fifth, when compliance cannot be achieved, national policies aiming at international environmental protection can claim an exception under GATT Article XX (b) or (g) if measures are not applied in an arbitrary or discriminatory manner. In addition, countries should further strive to find solutions to the global climate change problem in the Kyoto process.

## 1. Introduction<sup>1</sup>

The increasing climate change caused by emissions from energy production and consumption is one of today's most serious global environmental problems. Protecting the climate is a complex matter: the earth's atmosphere is a global common, which is characterised by an inappropriate distribution of property rights. Policy measures implemented in one region to protect it cannot exclude other regions from the resulting benefits, which results in the well-known free-rider problem. Thus, as long as there is no international coordination of these policies, there is a crucial lack of incentive for most nations to contribute to climate change policy. Establishing this kind of coordination is the main objective of the Kyoto Protocol (1997), which aims at a global reduction of greenhouse gas (GHG) emissions. It lists core areas in which climate change policy measures should be developed (for example, energy efficiency, agriculture, promotion of renewable energy forms), but does not recommend specific policy tools.

Recent problems in ratifying the Kyoto Protocol and its amendments and the complete withdrawal of the USA in 2001, however, have again made clear the conflicts of interest, varying assessments of the problem, and different levels of risk aversion both among the industrialised countries that are the major emitters of GHGs and between industrialised and developing countries. These conflicts of interest have hindered the implementation of optimal global policy measures up to the present day. Thus, it seems that only decisive action by individual countries or by coalitions of countries can ensure real progress in international climate change policy.

However, national climate change policies based on multilateral environmental agreements (MEAs) face another potential problem: they might infringe on WTO law. For example, financial support for the producers of energy from renewable resources might violate the WTO's agreement on subsidies. Neither WTO law nor MEAs offer clear-cut *ex ante* rules on how to handle such conflicts.<sup>2</sup> Yet Article 2 of the Kyoto Protocol demands that 'the Parties included in Annex I<sup>3</sup> shall strive to implement policies and measures under this Article in such a way as to minimize adverse effects, including ... effects on international trade'.

The purpose of our article is to analyse how national climate change policies can be devised in such a way that they do not infringe on WTO law. We will show that individual countries can implement national climate change policies without violating WTO rules or taking recourse to Article XX, without claiming precedence of

1 The authors would like to thank Michael Kohlhaas, Barbara Praetorius, Sabrina Shaw, Jan-Eirik Sørensen, René Vossenaar and Hans-Joachim Ziesing for helpful comments on an earlier version of this article as well as two anonymous referees who provided valuable advice for this version.

2 The debate about the relationship between multilateral environmental agreements (MEAs) and WTO rules is part of the general trade and environment discussions. For an overview see Althammer and Dröge (2003).

3 Annex I to the United Nations Framework Convention on Climate Change (1992), listing all developed member countries of the Convention.

MEAs over the WTO agreements and without suffering competitive disadvantages. We cover the main national policy tools applied in today's market economies: standards, taxes, and subsidies. In addition, we discuss two new instruments that are not yet widely used: labels and certificates. We also discuss border tax adjustments, which are proposed in the literature as an instrument to avoid the negative effects of domestic energy taxes on the international competitiveness of the economy or certain sectors. As a case study we look at energy policy in Germany, where the reduction of GHG emissions has been made a central energy policy goal, and existing programmes fostering renewable energy generation have been expanded, backed by a 1997 EU directive. By introducing guaranteed minimum prices for electricity from renewable sources, Germany has taken a distinctively different path than other EU member states, some of which have chosen instead to introduce production quotas for electricity from renewable sources, combined with certificate trading.<sup>4</sup> German energy policy also aims at achieving a higher degree of energy efficiency, and a reduction in energy consumption (see Appendix 1 for a brief description of relevant laws).

There are two climate change policies that we do not cover in this article. First, we exclude the flexibility mechanisms envisaged the Kyoto Protocol (that is, Clean Development Mechanism in Article 12, Joint Implementation in Article 6, and Emissions Trading in Article 17) because these systems, currently under construction, depend on multilateral action and thus need an analysis that goes beyond the scope and the intention of this article. However, we do discuss trade in so-called green certificates, which yields implications for emissions trading as well. Second, we exclude the long-standing issue of reducing subsidies for fossil fuels – especially coal – because a reduction of such subsidies would not conflict with WTO law. Hence, we concentrate on national policy instruments which reduce total energy consumption, foster energy efficiency, and promote electricity generation from renewable resources, and which might conflict with WTO law.

The article is organised as follows. Section 2 gives a short overview of WTO rules and principles relevant to national climate change policies. In Sections 3, 4, 5, and 6, we analyse the compatibility of labels, certificates, taxes, and subsidies, respectively, with WTO rules. We conclude with a brief summary of our main findings and their policy implications.

## 2. Relevant WTO regulations

The WTO trade regime contains a number of regulations that either directly or indirectly affect the way individual nations may implement national climate change policy. These concepts, principles, and definitions are summarised in the following.

<sup>4</sup> See Bräuer *et al.* (2000).

## 2.1 Basic principles

The WTO trade regime relies on several basic principles. The most relevant for our study are the most-favoured nation principle in Article I (1) GATT and the national treatment principle in Article III (4) GATT. It states that: ‘The products of the territory of any contracting party imported into the territory of any other contracting party shall be accorded treatment no less favourable than that accorded to like products of national origin in respect of all laws, regulations and requirements affecting their internal sale, offering for sale, purchase, transportation, distribution or use’. Article I (1) GATT states that ‘any advantage, favour, privilege or immunity granted by any contracting party to any product originating in or destined for any other country shall be accorded immediately and unconditionally to the like product originating in or destined for the territories of all other contracting parties’. They are the most important articles for the whole WTO legal framework and aim to prevent discrimination between domestic and foreign products.

## 2.2 Standards and technical regulations

National policies influencing economic activities are based mainly on standards and technical regulations. A definition of standards and technical regulations is included in the Agreement on Technical Barriers to Trade (TBT Agreement), a side agreement to the GATT (McGovern, 2003: para. 7.24). As a rule, all standards regulated by these agreements must be applied in accordance with the GATT most-favoured nation and national treatment principles. Both definitions, Annex 1.1 and 1.2 TBT Agreement, include processes and production methods (PPMs) as criteria for the differentiation of products. However, neither definition makes it clear whether non-product-related standards are subject to TBT rules.<sup>5</sup>

Nevertheless, we can state that three types of standards are distinguishable:

- *product standards*, which determine characteristics of a product during its consumption;
- *product-related standards*, which address those characteristics of a product that are determined by the production methods and are incorporated into the product;
- *non-product-related standards*, which are related to the production methods used but not to the product itself.

Several studies discussing the negotiation history of the TBT Agreement and panel rulings on ‘like products’ (see WTO–Alcoholic Beverages Panel, 1996) find that non-product-related criteria cannot be used as the basis for defining ‘unlike products’ under the TBT Agreement and GATT (see Chang, 1997; Michaelowa, 1997; Dröge, 2001). This means that a country can use the ‘like product’ concept

<sup>5</sup> A definition of standards is included in the Annex 1.2 to the TBT Agreement: ‘Document ... that provides ... characteristics for products or related processes and production methods.’ The term ‘or related’ has the purpose to explicitly exclude ‘non-related’ PPMs, according to Chang (1997: 147).

to determine domestic standards for domestic producers, but cannot apply this concept to distinguish among imported goods, or to discriminate against imported goods to the benefit of 'like' domestic products. As the Asbestos Case implies (Canada–France 2001, see WTO–Appellate Body, 2001), national law can, however, distinguish among products based on their PPMs and can apply the same distinction to imports. Product-related PPM standards are incompatible with WTO law only if they result in discrimination against imports (see Howse and Tuerk, 2001: 289; Charnovitz, 2002).

### 2.3 *The term 'like products'*

A crucial issue in the trade and environment debate is the term 'like products'. It is included in Article III GATT and other WTO rules on trade in goods, and occurs 16 times throughout the GATT texts. The term was never clearly defined. In 1970, the Working Party on Border Tax Adjustments recommended a case-by-case examination of problems arising from the interpretation of this term (see BISD, 1997: para. 18). It defined four criteria for the 'likeness' of products:

- (i) the properties, nature and quality of the products;
- (ii) the end-uses of the products;
- (iii) consumers' tastes and habits; and
- (iv) the tariff classification of the products.<sup>6</sup>

These criteria also played a role in the most recent ruling concerning 'likeness': the Asbestos Case, which shed new light on the issue. The Appellate Body pronounced that the evidence on each of the four criteria should be examined and then weighed together with any other evidence in order to determine whether any one product could be regarded as 'like' any other one.<sup>7</sup>

### 2.4 *Exemptions from basic principles*

Exemptions from basic GATT principles can be made for 'measures necessary ... for the protection of human, animal or plant life or health, or the environment', which must not lead to 'arbitrary or unjustifiable' discrimination between countries (Preamble of the TBT Agreement). The same exception is stated in Article XX (b) GATT, broadened by the provision in Article XX (g) for measures 'relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption'. For national energy policy aiming at the reduction of a global environmental problem, these exception clauses could become a last resort for individual WTO members in cases where their national policy measures are held inconsistent with WTO provisions.

<sup>6</sup> BISD (1997: para. 18) and WTO–Alcoholic Beverages Panel (1996: para. 101).

<sup>7</sup> In the Asbestos case, another important argument was that toxicity is 'a defining aspect of the physical properties' of asbestos fibres. See World Trade Institute (2001); Shaw and Schwartz (2002: p. 150).

In the literature, the scope of these provisions (see, for example, Althammer *et al.*, 2001) and the various trade and environment disputes settled by WTO panels and Appellate Bodies (for example, in the Tuna–Dolphin or the Shrimp–Turtle cases; see Howse, 1998; WTO – Appellate Body, 1998) have been analysed at great length. Moreover, a new dimension has emerged in the debate over the legality of national actions that affect foreign jurisdictions and are based on multilateral agreement. The WTO agenda for a new round of trade liberalisation includes clarifying the relationship between multilateral environmental agreements and the WTO law. Such a clarification would draw a line between trade measures that are enacted unilaterally (which may be allowed under Article XX), and trade measures that are currently required by a multilateral environmental agreement but not dealt with specifically under WTO law.<sup>8</sup> Because the Kyoto Protocol has not yet entered into force, there are no multilateral environmental agreements that act as a legal basis for national climate change measures. Thus, only the case-by-case interpretation of GATT exceptions would currently come into play in any conflicts over national energy policy measures that discriminate against other WTO members.

Border tax adjustments illustrate the issue further (see Section 5). Neither the 1992 UN Framework Convention on Climate Change nor its 1997 Kyoto Protocol explicitly require or endorse border tax adjustments or other specific trade-relevant policies. Parties are obliged, however, to enact policies and measures designed to achieve the objectives of the climate convention, while at the same time maintaining an open trading system. The legal interpretation would require recourse to the actual practice of parties, because neither the convention, the protocol, nor decisions by the parties have addressed the issue of border tax adjustment or other trade-relevant environmental policies in any sufficient detail. Hence, it seems that if a sufficiently large number of states enacted similar trade-relevant climate protection policies, these schemes could be justified by Article XX GATT instead of being seen as a violation of the GATT.

### 3. Labelling

The term ‘ecological label’ generally refers to information attached to products that helps buyers and suppliers make purchasing decisions based on the product’s environmental impact. We refer to ‘the use of labels in order to inform consumers that a product is determined by a third party to be environmentally more friendly relative to other products in the same category’ as defined by UNCTAD (1994: 5). The International Organization for Standardization (ISO) distinguishes among three different types of ecological labels, but only *type I* matches the UNCTAD

<sup>8</sup> For a discussion of Article XX reform proposals see Althammer *et al.* (2001); Biermann (2001).

definition: 'Type I is the eco-seal awarded as a license and based on a labelling programme'.<sup>9</sup>

For trade law analysis, the distinction between voluntary and compulsory labels is important, as it is reflected in WTO definitions of specific types of regulation (see Section 3.2 below). *Voluntary* labels can comprise three categories: they can be governmental, private, or quasi-governmental.<sup>10</sup> Voluntary labels leave it up to each individual producer to choose whether to meet the ecological criteria for a specific programme and to use the label for marketing purposes. *Compulsory* labels are command and control measures: they require that producers meet certain standards and regulations. Otherwise the label will not be granted and the producer will be denied market access.

Labels can support national climate change policies by providing important information on both, production processes and direct product characteristics. In many cases, ecological programmes attempt to apply life-cycle analyses (LCA), which are designed to include all possible information on a product's environmental impacts from 'cradle to grave', for example, generation of inputs, production processes, waste disposal during production, and product disposal after its use. Most schemes, however, simply focus on certain environmental effects of production, since in many areas a complete life-cycle assessment is difficult and expensive (Mullett, 1997: 383). There is an ongoing debate on the criteria that should be used when setting up a labelling programme for 'green' electricity. Electricity is a homogenous good that does not incorporate any characteristics of its production method. In order to attach the energy generation process to the product as a characteristic, control and certification of different electricity sources are necessary and would lead to separate markets for electricity from different sources. The criteria for 'green' production, that is, production based on renewable resources, could include (i) the reduction of greenhouse gas emissions, (ii) resource intensity, (iii) processes and procedures involved in establishing new capacities (production of solar cells, the construction of hydropower stations, etc.). Such criteria could be implemented using quotas, for example by including a share of new high-tech power stations in the overall production portfolio of a regular supplier in order to reduce greenhouse gas emissions; or by using a range of environmental data for the local ecological impact of specific types of power stations, such as hydrostations.

### 3.1 *Application in Germany*

The ecological labelling of products has a long tradition in Germany, starting with the introduction of the Blue Angel in 1977. Under the *Blue Angel* scheme, energy

<sup>9</sup> Type II is the self-declaration claim made by producers, importers, and retailers on products and services, Type III is the report card label, which gives information according to fixed indices, similar to general consumer information on product packages. Cited from OECD (1997: 9f).

<sup>10</sup> The EPA (US Environmental Protection Agency) labels mixed schemes involving governmental agencies and NGOs as 'quasi-governmental'; for more examples see WTO-CTE (2000).



efficiency became a criterion for judging the environmental impact of different products. The explicit labelling of the energy consumed by products was introduced in 1998 by the energy laws *Energieverbrauchskennzeichnungsgesetz* (EnVKG) and *Energieverbrauchskennzeichnungsverordnung* (EnVKV). The labelling of electricity according to its origin and production became popular following the liberalisation of electricity markets in Europe during the 1990s. The German electricity market was liberalised in 1998. Currently, consumers can choose among different suppliers and 'packages' with varying flat rates and pricing structures. To meet the rising demand for information on the origin of electricity, suppliers are diversifying their product range by specifying the energy sources used in production. As part of this process, labelling schemes have become increasingly important.

At present several initiatives by German non-governmental organisations award labels to electricity producers who use renewable resources.<sup>11</sup> These voluntary programmes all aim at creating a market for clearly identifiable 'green' electricity. However, they also assign the 'green' label to electricity from block-type thermal power stations and other combined heat and power stations that use some non-renewable sources like coal or gas. This is justified by the high efficiency of these combined heat and power technologies. Nevertheless, labels should make a clear distinction between electricity from renewable sources and electricity from non-renewable sources using technology of above-average efficiency. Otherwise, they lead to inconsistencies.

The EnVKG (*Law on Labelling and Limits of Energy Consumption*) mandates that producers provide a label with additional information specifying the energy consumption and use of other resources as well as CO<sub>2</sub>-emissions for all technical devices and vehicles used in producing the product. Germany has also to comply with EU directive 2001/77/EC (27.9.2001), which requires that EU members issue guarantees of origin for traded electricity from renewable energy sources on request. These proof-of-origin certificates are compulsory, and had to be introduced by the end of 2003 in all EU member countries.

### 3.2 *Potential conflicts with WTO law*

Trade-related impacts are all measures that make market entry for foreign firms more costly and foreign products less competitive. Eco-labels and proof of origin requirements for electricity may create the following barriers to foreign companies: (i) Foreign producers could have problems getting information on voluntary eco-labelling schemes, proof-of-origin requirements, and tradable green certificate programmes in target markets. (ii) Regulations such as proof-of-origin requirements for specific products could be applied in discriminatory ways to

<sup>11</sup> Examples are 'Grünstrom' of the Institut für angewandte Ökologie e.V., 'Grüner Strom' Label by EUROSOLAR, BUND, NABU; 'Gütezeichen für Ökostrom' of the Öko-Institut/Bremer Energie Konsens (Timpe, 1999).

foreign suppliers, for example by asking them to meet higher labelling standards than domestic suppliers. These regulations can also pose indirect barriers, for example when foreign firms are excluded because a label is awarded only to suppliers using specific processes and production methods (PPMs) based on domestic conditions.<sup>12</sup> (iii) A labelling or a green certificate scheme could explicitly exclude foreign firms, thus constituting a direct barrier to market access.

There are currently no explicit trade rules that govern green product labelling. WTO rules applicable to labelling can be found in the TBT Agreement and in the GATT. The TBT Agreement states that WTO members should coordinate the introduction and application of national standards and technical rules at an international level. Moreover, it outlines a system of mutual information sharing and consultation to increase the transparency of national measures.

According to the TBT Agreement, voluntary programmes and their criteria are regarded as *standards*, while mandatory labels fall under the category of *technical regulations* (Annex 1.1 and 1.2 to the TBT Agreement, see McGovern, 2003: para. 7.24). As WTO rules are applicable only to those national policies that affect international trade (Buck and Verheyen, 2001: 15), private, non-governmental voluntary labelling initiatives cannot be addressed directly via WTO mechanisms, even if trade distortions arise. As trade effects alone do not automatically trigger measures under WTO law, such conflicts must be dealt with through bilateral consultation instead.

The WTO legal texts do not explicitly refer to labels based on specific programmes, but rather to all kinds of labels with product information. A product can be declared environmentally friendly on three different but interrelated grounds: *product criteria* (that is, consumption externalities), *product-related criteria* (that is, externalities stemming from production, which are incorporated in the product), and *non-product-related criteria* (that is, production externalities not incorporated in the final product). Non-product-related issues are especially relevant for life-cycle analyses. These categories are subject to different treatment under WTO law (see Section 2.2). Several studies conclude that non-product-related criteria found in ecological labelling programmes are not included in the standards permitted to distinguish products under the TBT Agreement (Chang, 1997; Michaelowa, 1997). Nevertheless, as long as there is no explicit ruling that prohibits distinguishing products based on non-product-related standards, it is an open issue whether this violates the TBT Agreement.

Mandatory – as opposed to voluntary – labelling of a product's processes and production method is subject to TBT rules because they fall under the definition of technical regulations, regardless of the product to which the labelling applies. TBT rules state that technical regulations must involve 'treatment no less favourable

12 This can cause severe barriers to market access, especially for firms from developing countries. Industrial countries' production standards are not relevant for some countries, due either to different environmental conditions or to the actual production technologies.

than that accorded to like products of national origin' (Article 2.1 TBT Agreement) and ensure that there are no 'unnecessary obstacles to international trade' (Article 2.2 TBT Agreement). This would mean that rules on proofs of origin for energy suppliers must not discriminate against foreign suppliers.

The investigation into voluntary ecological labelling has to go beyond the TBT Agreement and address whether basic GATT rules apply to ecological labelling programmes that are not covered by the TBT Agreement. In the Tuna-Dolphin conflict (1991), Mexico felt that the US 'Dolphin-safe' label discriminated against Mexican tuna, and referred to Article I GATT (the most-favoured nation principle). The GATT panel,<sup>13</sup> however, rejected this claim on the grounds that the label was granted irrespective of the canned tuna's country of origin (Chang, 1997: 150; Altemöller, 1998: 254). Thus, whether or not a voluntary eco-label violates the most-favoured nation principle depends on whether or not one country helps another country to gain advantages from selling the labelled product (Tietje, 1995; Chang, 1997: 151). Therefore, the information given by a label on the production method (non-product-related PPM) is not relevant to the most-favoured nation clause.

WTO dispute settlement bodies have made no explicit statements to date on Article III (4) GATT (the national treatment principle) with respect to trade effects of non-product-related labelling criteria. However, as already mentioned, decisions have been made on the likeness of products (in the Alcoholic Beverages Case and the Asbestos Case). In general, identical goods produced with different methods are regarded as 'like products'. Labels designed to differentiate goods using the PPMs would therefore not automatically lead to a differentiation in WTO terms. And this does not generate a conflict as long as domestic and foreign 'like products', as a group, are not treated differently (Howse and Tuerk, 2001: 289).<sup>14</sup>

If consumers refuse to buy a product because the country of origin does not use a certain production method, discrimination takes place, but Article III (4) is not applicable. Article III (4) also prescribes that equal treatment should comprise 'all laws, regulations and requirements affecting their internal sale, offering for sale, purchase'. The term 'affecting' has been interpreted very broadly and has opened up room for non-compliance with national treatment obligations under Article III (4) for labels that lead to discrimination against foreign products based on non-product-related PPMs (Tietje, 1995: 140; Chang, 1997: 153).

13 GATT Tuna Panel (1991).

14 A similar conflict arose in 1992 when Austria subjected tropical timber to a mandatory national label that required sustainable forestry as production method. Malaysia felt discriminated against by this label and claimed that application of the criterion 'sustainable forestry' is not in accordance with Article III (4), because the forestry method used is not a characteristic of the wood itself as long as this method is not an international standard and is not applied to other types of wood. However, the panel did not have to reach a ruling as Austria and Malaysia settled out of court (See Sucharipa-Behrmann, 1994: 56; Mullet, 1997: 393).

Nevertheless, even when GATT basic principles are violated, governments can always fall back on the general exemptions in Article XX GATT. But since no conflict over ecological labelling has emerged so far, the relevance for Article XX GATT has not yet been investigated. Past conflicts over trade and the environment that were brought before GATT dispute settlement and legal analyses (as discussed in Section 2.4) clearly show that there is room for environmental policy instruments that can help preserve global resources.

For all the reasons mentioned, the legality of electricity labelling schemes under WTO law clearly depends on how they are designed and implemented. Differentiating a homogeneous good according to its PPMs does not contradict WTO law as long no member country discriminates against another or creates unjustified obstacles to international trade. Moreover, even if labels were determined to violate basic trade rules, the question would arise whether the exception in Article XX (g), i.e. protection of a global resource, applies. Currently, electricity labelling is not mandatory in Germany. If it were mandated by German law – and not just supported by private initiatives – other countries would be able to challenge such laws based on the TBT Agreement or general GATT principles. However, if none of its members lodged a complaint, the WTO would not intervene.

The EU-wide introduction of proofs of origin for energy from renewable resources (EU directive 2001/77/EC) is mandatory and thus a *technical regulation* according to WTO law. This treatment is independent of the label's subject, which means that a proof of origin can be demanded for any production method. The requirement to supply a proof of origin conforms to WTO law as long as there is no discrimination against suppliers from other WTO member countries.

### 3.3 *Conclusions and policy options*

Labels are a tool that can help to inform consumers and other interested parties about the environmental impacts of a product. They are becoming popular with non-governmental organisations in Germany as a means of distinguishing otherwise homogenous electricity forms according to the production method used. Their major goal is to foster renewable power generation by establishing and broadening markets for 'green' electricity and thus to support German efforts to reduce GHG emissions.

There is no reference to ecological labelling in WTO law as such. Compatibility with WTO law depends on the TBT agreement, which deals with standards and technical regulations, and on the basic principles of the GATT. Mandatory labels are fully covered by WTO law and they may be used as long as they do not discriminate against foreign suppliers. It is not clear, however, whether voluntary labels with specific emphasis on non-product-related processes and production methods are covered by WTO rules. This question could only be answered if a complaint were lodged with the dispute settlement bodies. Standards on PPMs can cause conflict under WTO law if other WTO members feel discriminated against. Currently, the resolution of such conflicts would depend on how WTO dispute

settlement bodies interpret both non-product-related standards and their validity in distinguishing otherwise 'like' products, and on what role labels would play in protecting a global resource.

A long-term policy goal for the labelling of environmentally friendly electricity generation should be to work towards international co-ordination of national approaches parallel to or within the Kyoto Protocol consultations. Co-ordination would make it easier for producers to use labels in compliance with international trade rules and would lead to greater transparency in worldwide electricity production. The concept of a 'green single-subject label' for electricity production methods and the creation of internationally agreed criteria need further analysis and discussion.

#### 4. Green certificates

Certificates are a crucial tool of international climate policy. The Kyoto Protocol stipulates the introduction of internationally tradable CO<sub>2</sub> emission rights (see Buck and Verheyen, 2001, for a detailed analysis of WTO issues related to CO<sub>2</sub> emission trading). The concept of green certificates is similar to that of tradable pollution permits, the difference being that green certificates document the number of electricity units produced in an environmentally friendly manner, instead of certifying units of pollution rights.<sup>15</sup> The electricity units are sold at market rates but producers receive additional revenues from the certificate market. Demand for green certificates could be created by domestic regulation of the energy sector. By setting quotas which determine the minimum share of electricity that must stem from renewable resources, producers are forced either to buy certificates from green producers or – depending on certificate prices – to invest in green technologies and sell green certificates themselves. In any case, by introducing green certificates, a government enables producers to meet their obligations without immediate changes of production technologies.

Besides the information on the power units generated, green certificates can be designed to:

- include information about the type, location and time of power generation;
- be tradable across suppliers and across national borders.

##### 4.1 *Application in Germany*

Currently, Germany has no green certification system, although green certificates are a subject of policy debate. Instead, support mechanisms from the Renewable

<sup>15</sup> It is an open issue how 'green' electricity imports should be taken into account in a country's GHG balance under the Kyoto Protocol. Bräuer *et al.* (2000) find that the co-existence of markets for CO<sub>2</sub>-emission rights and for green certificates will lead to inefficiencies. The option to refinance the emission obligations in either the green certificate or the CO<sub>2</sub> emission market leads to suboptimal choice of technologies.

Energies Act (EEG) have been used to foster the production of renewable energy. This law guarantees a minimum price per unit of power from renewable sources and allows grid operators to buy any amount supplied to them at this price (see also discussion in Section 6). Thus, there is no explicit targeting of quantities.<sup>16</sup> However, the German support measures for renewable power generation are also guided by the targets stipulated in the European Union White Paper, which states that 12 % of gross energy consumption in 2012 should stem from renewable sources (see European Commission, 1997). Improved effectiveness in reaching this goal could be achieved by green certification, which would enable the targeted amounts to be clearly assigned and give electricity producers incentives to invest in green technologies based on the certificate market price. A Europe-wide system of tradable green certificates, the Renewable Energy Certificate System (RECS), has been under construction since 1998. The participants are members from European energy companies, governments and energy consultants.<sup>17</sup>

#### 4.2 *Green certificates and WTO rules*

As no international green certificate trading system exists at present, it is only possible to mention some preliminary considerations regarding WTO law. The first question would be whether green certificates should be regarded as ‘goods’ (or ‘commodities’ or ‘products’) under the GATT 1994 or as ‘services’ under the General Agreement on Trade in Services (GATS, 1994). Green certificates are derivatives of the product ‘electricity’ from renewable sources. A specified amount (proportion) of green electricity is subject to trading, but the physical power is sold and distributed separately.

If one assumes that tradable green certificates can be treated as products under the GATT, the basic principles for trade in goods apply: most-favoured nation treatment and national treatment. However, tradable green certificates may also fall under the GATS. According to Article I of the GATS, there are four modes of supply: cross-border supply, consumption abroad, commercial presence and the temporary movement of natural persons (Article I: 2 (a) to (d) GATS). The approach to the liberalisation of services in the GATS is based on a list of commitments in specific sectors. If a country does not put a sector on this list, it is not willing to negotiate on any of the four foreseen modes of market access for this specific topic. Energy supply and related issues such as green certificates are currently not listed by any WTO member. If trade in green certificates were to be

<sup>16</sup> Regular power suppliers and networks are forced to distribute this ‘green’ energy and the extra costs of supporting these technologies are born by consumers (who are charged 0.01 €/kWh extra for all electricity). An example of how the share of specific ‘green’ energy can be calculated is given in Timpe (1999: 7).

<sup>17</sup> ‘RECS provides a mechanism for representing a specific instance of the production of a megawatt hour of renewable electricity by a unique certificate which can be transferred from owner to owner before being used as proof of generation, or exchanged for financial support.’ See <<http://www.platts.com/features/greencertificates>> and <<http://www.recs.org>>.

listed under GATS, basic trade principles – as under the GATT – would apply: most-favoured nation treatment (Article II GATS), market access (Article XVI), and national treatment (Article XVII) for ‘like services’ of any other member country.

Under both GATT and GATS rules, it is relevant how a national certificate trading system regulates access for foreign and domestic competitors. Compliance with WTO rules is not fulfilled if quantitative restrictions on trade for foreign sellers of certificates exist or if domestic market access is regulated in a discriminatory way against providers from different countries. Therefore, to design national and international systems for tradable green certificates in compliance with WTO rules, nations should agree either to mutually recognise national certificates and their underlying criteria for renewable energy sources, or to harmonise national systems.

## 5. Taxes

Economic theory differentiates between ecological taxes (or charges) on production or consumption and taxes (or charges) on pollution. The concept of taxing emissions and internalising externalities was first suggested by Pigou (1932). However, the implementation of a Pigouvian tax requires a substantial amount of information in order to determine the optimal level of pollution. Therefore, today’s ecological taxes are generally based on the price–standard approach (PSA). This assumes that the desired level of environmental quality is determined in the political process (Baumol and Oates, 1971).

With respect to energy policy, one can differentiate between a tax on primary energy consumption and a tax on final energy. The former is preferable because it creates incentives for improving energy efficiency at all levels of the energy transformation process. However, without international harmonisation, it would be difficult to introduce such a tax on primary energy because domestic final energy could be easily replaced by imported final energy (Bach *et al.*, 2002: 804).

In general, taxation is widely seen as a cost-effective instrument for reducing carbon dioxide emissions. Some even see potential for energy taxes to become the main pillar of fiscal systems in the twenty-first century (Barker, 1997: 239). Energy taxes enable the long-term costs of climate change to be included in the price system, thus bringing the private costs of carbon dioxide emissions into balance with the environmental and social costs of global warming. A number of countries, mainly in northern Europe, have already implemented energy or carbon taxes in the context of broader ecological tax reforms.

### 5.1 Application in Germany

In 1999, the *First Step Toward an Ecological Tax Reform Act* came into force in Germany. The *Ecological Tax Reform* (ETR) has two objectives: first, lowering energy consumption and improving energy efficiency in order to decrease

greenhouse gas emissions; and second, using tax revenues to lower social security contributions in order to increase employment. The ETR will thus ideally yield a 'double dividend' (Kohlhaas, 2000; for a simulation study on the ETR see Bach *et al.*, 2002).

As a first step, the German government increased the existing tax on gasoline, heating fuel, diesel fuel, and natural gas, and introduced a new tax on electricity. There is no environmental tax on coal, however, which is the most carbon-intensive primary energy source. From 2000–2003, four more steps of the ETR followed, with yearly tax rate increases on gasoline and electricity. The government also allowed some groups compensations and reductions (OECD and IEA, 2001: 85). Energy from renewable sources is exempt from the ecological tax as long as it is either used by the producer directly or is supplied to an electricity grid that is exclusively fed by renewable sources.

### 5.2 *Implementation problems of environmental taxes*

WTO rules do not pose any barrier to the implementation of national environmental taxes as long as imports from WTO member countries are taxed in the same way as domestic goods. Implementation problems often arise due to resistance from domestic industry, however, which often results in adjustment measures such as special exemptions or rebates for certain sectors (OECD, 2001a). In many countries, domestic opposition to the introduction of energy taxes is based on the popular perception that these taxes would negatively affect the international competitiveness of domestic industries. Whether the danger of a loss in competitiveness is empirically demonstrable or merely the misperception of a tax proposal's potential 'victims', energy taxation is frequently seen as a major threat to domestic industries. As a result, energy tax proposals have triggered strong political opposition in the past and will likely to continue to do so in the future. Political pressure from industry could thus create a serious obstacle to national climate protection strategies.<sup>18</sup>

To offset these – real or perceived – competitive impacts of energy taxes, one option is a well-designed and internationally agreed border tax adjustment (BTA) that would not undermine the environmental objective of reducing carbon dioxide emissions. Although this instrument is rarely discussed in the current debate on climate policy, it has great potential for helping to solve the competitiveness problem mentioned above. We turn to a discussion of this instrument and its eligibility under WTO law in the following.<sup>19</sup>

### 5.3 *Border tax adjustment*

Border tax adjustments have traditionally been implemented for economic, not ecological, reasons. Theoretically, there are two concepts of where to levy a tax on

<sup>18</sup> In some cases, strong opposition from industry lead to the complete failure of energy tax proposals. See Baron (1997) for details.

<sup>19</sup> For an even more detailed discussion see also Biermann and Brohm (2004).



traded goods. First, the *destination* principle stipulates that goods should be taxed in the country of consumption (Jackson, 1989). Each country is allowed to choose its own domestic tax regime, and products from all countries are still able to compete in the international market. The universal – that is, internationally harmonised – application of the destination principle thus levels out the competitive basis for all countries: exported or imported products are neither exposed to double taxation, nor do they compete on different competitive terms arising from different national tax levels. The second principle is the *origin* principle, which requires that products be taxed in the country of production. If the origin principle were internationally accepted and taxes were harmonised, border tax adjustments would not be necessary.

In the context of discussions on the harmonisation of indirect taxes in the European Economic Community, in 1968 GATT established the Working Party on Border Tax Adjustments, which chose the destination principle. The BTA definition still represents the prevailing view within the WTO system (WTO-CTE, 1997: para. 28).

### *Application*

Examples of border tax adjustments with an environmental aspect can be found in the *Superfund Tax* and the *Ozone-Depleting Chemicals Tax*, both schemes enacted in the United States. The *Superfund Tax* was introduced in 1986 as a prior-stage specific tax on listed chemicals that were used in the production of chemical derivatives. This tax was challenged successfully by the European Community before a GATT panel (BISD, 1987).

However, the GATT panel only examined *how* the tax was applied, and not *for what* political purpose. Since the US imposed the tax directly, it was considered to be eligible for a BTA (Pitschas, 1995: 492). Additionally, the Superfund Case dealt with inputs that were physically incorporated in the product, while energy is consumed during the production process. This makes the case of energy more complicated (see also below).

The US *Ozone-Depleting Chemicals (ODC) Tax* was introduced to implement the Montreal Protocol on Substances that Deplete the Ozone Layer. It represented a tax on the domestic consumption of certain ozone-depleting chemicals, either directly or indirectly through the consumption of products manufactured using the ODCs. Furthermore, the ODC Tax applied to substances used in the production process that were not physically incorporated in the final product (Brack, Grubb, and Windram, 2000: 12).

The border tax adjustment of the ODC Tax was quite effective in protecting the domestic ODC industry from foreign competitors, while also allowing a gradual phasing-out of ODCs in US industry. It established the importance of border tax adjustments in the context of taxes with an environmental purpose (Brack, Grubb, and Windram, 2000: 79). So far, no country has claimed that tax adjustments on ODCs imported to the United States violate GATT or WTO regulations.

*Border tax adjustments under WTO law*

When investigating whether WTO law restricts the implementation of border tax adjustments on energy taxes, one needs to consider different provisions and principles of the WTO framework. WTO rules differ for imports and exports, and no regulations deal specifically with border tax adjustments.

A number of possible border tax adjustment systems are clearly not acceptable under WTO law. First, direct taxes – such as income taxes or social welfare charges for producers – are not eligible for adjustment under the GATT, whereas indirect taxes – that is, taxes on products – are eligible. This distinction between direct and indirect taxation, which follows from the prevailing destination principle in the WTO system, has been generally accepted as the basis for GATT/WTO provisions on border tax adjustments applied to both imports and exports.<sup>20</sup> Thus, only indirect taxes are eligible for adjustment in accordance with the destination principle. This is embodied in different GATT/WTO provisions and has also been confirmed by a GATT panel in the context of the US Domestic International Sales Corporations (DISC) legislation in the 1970s (Biermann and Brohm, 2004).

Energy taxes are clearly indirect taxes. WTO law remains unclear about the eligibility of indirect taxes for adjustment. This applies particularly in the case of indirect taxes that are indirectly applied to end products. This method of taxation includes input or process-related ‘prior-stage’ taxes on physical inputs, on energy or on other parts of the production process. The 1970 Working Party on Border Tax Adjustment could not reach a consensus on categorising ‘taxes occultes’ – including taxes on advertising, energy, machinery and transport – that is, their eligibility for border tax adjustments could not be determined (BISD, 1997: para. 15a).

Article II (2) GATT only refers to taxes applied ‘directly or indirectly’ to the product, which in principle does not exclude inputs at different stages of the production process. Article II (2) (a) further states that ‘a charge equivalent to an internal tax imposed consistently with the provisions of paragraph 2 of Article III in respect of the like domestic product or in respect of an article from which the imported product has been manufactured in whole or in part’. The use of the word ‘article’ may indicate that the indirect tax is construed as being restricted to products that are physically incorporated into the final product. However, the provision does not answer the question clearly. Article VI (4) with its wording ‘borne by products’ is as equally vague concerning exports as Article II (2).

The interpretation of measures related to prior-stage inputs and PPMs can also be explored in related panel decisions. The panel report on the US-Superfund Case decided that taxes on ‘materials’ that were used for the manufacture of domestic products may be taken into account when imposing border tax adjustments on imported like products. The panel did not, however, indicate whether the chemicals were physically incorporated in the final product in any recognisable way.

20 See for instance WTO–CTE (1997), Dam (1970), Demaret and Stewardson (1994: 16).

The 1979 SCM Code is also relevant for border tax adjustments on exports and refers in paragraph (g) of its Annex to ‘the exemption or remission in respect of the production and distribution of exported products of indirect taxes’, which is generally permitted. The remission of prior-stage cumulative taxes on goods or services used in the production of products is, as stated in paragraph (h), only permitted if the taxes are levied on goods that are physically incorporated into the exported product. It remains unclear whether energy taxes fall under the provision for prior-stage cumulative taxes. The 1994 ASCM slightly changed the impetus behind these provisions. Under Annex II ASCM it is now allowed that countries remit taxes on exports, if the taxes are prior-stage cumulative indirect taxes on inputs. Footnote 61 defines these inputs as ‘physically incorporated, energy, fuels and oil used in the production process and catalysts which are consumed in the course of their use to obtain the exported product’ (WTO–CTE, 1995). This seems to change how the eligibility of energy taxes for border tax adjustments can be interpreted and may imply that an indirect tax on a production input would be eligible for adjustment if the inputs included energy, fuels or oil that were used or consumed in the production process (see also Demaret and Stewardson, 1994: 31). However, whether footnote 61 clearly allows for BTA on energy is the subject of ongoing discussion.

#### 5.4 *Conclusions and policy options*

The introduction of energy taxes has faced substantial resistance from industry in many countries, frequently resulting in adjustment measures such as special exemptions or rebates for certain sectors. In general, taxes are compatible with WTO rules as long as there is no discrimination between domestic and foreign products. This section focused on border tax adjustments for energy taxes that could be used to offset potential competitive disadvantages without watering down the environmental tax objectives, for example, the reduction of carbon dioxide emissions. However, a broader discussion about the feasibility of border tax adjustments in the context of energy taxes has not yet taken place.

We have found that it is unclear whether border tax adjustments for energy taxes are permitted under WTO law. Thus, we can only assess the chances of a few conceivable border tax adjustment systems to be found acceptable. Direct taxes are clearly not eligible for adjustment under GATT, whereas indirect taxes are eligible. This distinction originates in the WTO system’s prevailing destination principle, and has been generally accepted as a basis for WTO provisions on border tax adjustments. The eligibility of indirect taxes for adjustment, however, remains unclear when *indirect taxes* are *indirectly* applied to end products. This is particularly relevant for energy as an input that is no longer physically present in the final product. One important argument supports the conclusion that energy taxes would in general be eligible for border tax adjustment: the provision in footnote 61 of the 1994 ASCM, which states that a country is allowed to remit

taxes on exports for prior-stage cumulative indirect taxes on inputs ‘physically incorporated, energy, fuels and oil used in the production process’.

However, the eligibility of such adjustments will depend heavily both on actual state practice, which is crucial in determining the interpretation of the treaties, as well as on decisions by the WTO dispute settlement system. Given the importance of climate change policy for world trade and remaining ambiguities in WTO law, it would be desirable for governments to initiate a process to reach a multilateral understanding on the permissibility of border tax adjustments for energy taxation and also for other inputs that are not physically incorporated in the final product.

## 6. Subsidies

From an economic perspective, a subsidy can be defined in a broad sense as an economic benefit received by a private agent from public funds at no cost or below the costs of producing the benefit. In a more narrow sense, subsidies can be understood as financial assistance (for example direct payments, tax exemptions) provided by the government to the private sector. All economic definitions of subsidies have one common characteristic: a benefit is conferred from the public on the private sector. Subsidies have long been used to regulate the economy as well as to promote national policies. All countries use subsidies as a policy instrument. A subsidy is not compatible with the idea of making polluters pay for environmental damage. However, if properly designed and applied, subsidies may contribute to an improvement of the environment in the long run.<sup>21</sup>

### 6.1 *Application in Germany*

In Germany, the consumers and producers of energy are supported through direct payments, price guarantees, and tax exemptions. The Renewable Energies Act (Erneuerbare-Energien-Gesetz, EEG), which entered into force in April 2000, introduced a system of financial aid for power generation from renewable energy sources. The EEG aims at achieving a 12 % share for electricity produced from renewable energy sources by 2010. The Act provides price guarantees for the producers of renewable energy, like hydrodynamic power, landfill gas, firedamp, sewage gas, biomass energy, geothermal energy, wind energy, and solar radiation energy. Grid operators are compelled by law to remunerate the producers using the prices fixed in paragraphs 4–8 EEG. The additional costs have to be borne by the grid operators and will, at least in the long run, be passed on to consumers.

Similarly, the Co-Generation Act (Kraft-Wärme-Kopplungsgesetz, KWKG) promotes the use of the combined production of heat and power. The KWKG stipulates guaranteed prices for electricity to be paid by the grid operators to the energy producers of heat and power. The New Co-generation Act, which entered

<sup>21</sup> See Kim (2000) for a detailed discussion.

into force on 1 April 2002, protects the existing combined heat and power energy production plants.

Furthermore, the German Ecological Tax reform (ETR) includes a series of tax reductions in response to pressure groups' continuing complaints about the tax burden. The German government decided to reduce the burden caused by the ETR for energy-intensive sectors, commuters, public transport and low-income households. Exemptions from the taxes on petroleum products, which were already in effect before the ETR entered into force, were prolonged (for example, for transport by air and ship). As a result, it is mainly private households, the retail sector, the road transport sector, service companies, public institutions and small enterprises that now pay the full ecological tax rate (Bach *et al.*, 2002). The ETR also provides funds for subsidies of energy production plants using renewable energy sources. In 2002, these transfers amounted to 200 million Euros (BMU, 2002: 15).

## 6.2 Potential conflicts with WTO law

In principle, the WTO law follows a 'non-subsidisation' approach, although there are detailed rules on the different kinds of national subsidies. These rules include Article XVI GATT and the ASCM. Article XVI (1) GATT states that in cases of subsidisation, including income or price supports, 'which operate[s] directly or indirectly to increase exports of any product from, or to reduce imports of any product into, its territory', the contracting parties must be notified. According to the ASCM, a subsidy can either be a benefit-conferring *financial contribution* from public funds or a benefit-conferring *price or income support*.

Environmental subsidies in general were regarded as non-actionable subsidies during the Uruguay Round (OECD, 2001b: 13). Nevertheless, the exemption for environmental subsidies, which had been agreed upon and was part of the ASCM (Article 8.2(c)) until 1999, has not been renewed. Hence, the issue to be addressed is whether the German price guarantees for producers of renewable energy (EEG and KWK laws) have to be regarded as a subsidy at all under WTO law. This would be the case if all three of the criteria legally defining a subsidy were satisfied:

1. A benefit has to be conferred (Article 1.1(b) ASCM).
2. The measure must be specific (Article 2 ASCM).
3. There must be a financial contribution by government or any form of income or price support (satisfying the conditions specified in Article 1.1(a)(1) or 1.1(a)(2) ASCM).

(ad 1) In order to qualify for a subsidy according to Article 1.1(b), a governmental measure requires that 'a benefit is thereby conferred'. There is no definition of the term benefit in the ASCM or any other WTO agreement. Past WTO rulings indicate that a benefit exists when the government measure makes the recipient 'better off' than he or she would be without it in the marketplace (Benitah, 2001; McGovern, 2003: para. 11.3133). In the case of the EEG and KWKG, a benefit is

conferred on the recipient because the grid operators are required to pay the legally determined price, which is *higher* than the market price.

(ad 2) According to Article 2.1 (a) ASCM, specificity requires that the government measure be granted selectively in law or in fact to an enterprise, industry, or group of enterprises or industries (referred to in the ASCM as ‘certain enterprises’). Article 16.1 ASCM defines an industry as the domestic producers of like products as a whole.<sup>22</sup> It seems obvious that the producers of energy from renewable sources should be considered an industry, and that, therefore, the funding under the EEG and KWKG should be considered specific. However, Article 2.1 (b) ASCM specifies an exception to this rule that is relevant in this case. If the legislation, on which the granting authority bases its operations, establishes objective criteria or conditions governing the eligibility for, and the amount of, a subsidy, and if the eligibility is automatic and the criteria and conditions are strictly adhered to, specificity shall not exist according to Article 2.1 (b) ASCM. These conditions are satisfied by the EEG and KWKG and, therefore, render the financial support non-specific. However, Article 2.1 (c) ASCM specifies an exception to this exception (or a counter-exception) which might also be relevant in this case. ‘If, notwithstanding any appearance of non-specificity resulting from the application of the principles laid down in subparagraphs (a) and (b), there are reasons to believe that the subsidy may in fact be specific, other factors may be considered.’ The factors listed in the next sentence include predominant use by certain enterprises and disproportionately large subsidies granted to certain enterprises. It can be argued that this is the case for the EEG and the KWKG. Although even private households are eligible for the financial compensation specified in the EEG, disproportionately large amounts of money may go to enterprises. Obviously this judgement depends on the definition of the term ‘disproportionately large amounts’. In our view, Article 2.1 ASCM leaves substantial room for interpretation when applied to the EEG and KWKG. Therefore, it is difficult to judge whether specificity prevails according to Article 2.1 ASCM.

(ad 3) In order to qualify for a subsidy, a measure must involve a financial contribution by a government (Article 1.1(a)(1) ASCM). However, the payments to electricity producers using renewable sources are a financial contribution by the grid operators and not by the government. Thus, the EEG and the KWKG do not meet the requirement of Article 1(a)(1), first sentence. This judgement is in line with the recent ruling of the panel on United States – Measures Treating Export Restraints as Subsidies.<sup>23</sup> The report argues that ‘by introducing the notion of a financial contribution, the drafters [of the ASCM] foreclosed the possibility of the treatment of any government action that resulted in a benefit as a subsidy.’ (WTO–Export Restraints, 2001: 8.38). McGovern (2003: 11.313) comes to

<sup>22</sup> See also Grave (2002: 192) on this point.

<sup>23</sup> WTO–Export Restraints (2001: para. 8.65).

a similar conclusion: ‘The requirement of a financial contribution reflects an intention not to include in the notion of subsidy all governmental measures conferring benefits’.

The measures of the EEG, however, might still be considered an income or price support under 1.1(a)(2) ASCM. According to McGovern (2003: 11.3132) the definitions of income or price supports have not received much attention. In a decision from 1960, a GATT panel pronounced that a subsidy is deemed to exist only when support measures result in a loss to the government. Thus, within the terms of Article XVI, a guaranteed price paid by a government for a product would constitute a subsidy. Grave (2002: 252) arrives at a similar conclusion. He argues that the contracting parties of the GATT 1947 assumed that income and price support requires the use of government resources. However, the government does not grant producers the price guarantees under the EEG and KWKG. Rather, it forces two independent private actors to strike a deal at predetermined prices if certain conditions prevail. Therefore, the German approach to promoting renewable energy production does not fall under the WTO definition of subsidies according to Article 1(a)(2) ASCM. We may therefore conclude that the provisions in the EEG and the KWKG for supporting power generation from renewable energy sources do not meet the criteria for a subsidy as specified in Article 1.1(a)(1) or (2).<sup>24</sup>

Hence, in the case of the EEG and the KWKG, only one of the three conditions necessary to establish the existence of a subsidy is satisfied, namely the conferring of a benefit. The requirement of a financial contribution by the government is not met, and it is unclear whether specificity prevails in this case. Therefore, the price support schemes under the EEG and KWKG cannot be classified as subsidies under WTO law.

Unlike the price guarantees, the financial transfers and tax exemptions under the ETR must be considered subsidies according to Art. 1 ASCM. They confer a benefit, involve a financial contribution from the government, and are specific, as they target industries and/or groups of enterprises. However, as the subsidies are not based on export performance or the use of domestic over imported goods, they are not prohibited. They may, however, be actionable if they cause an adverse effect to the interests of other members as specified in Art. 5 ASCM. Whether such an adverse effect exists cannot be determined precisely. Presently, it seems unlikely that the financial transfers and tax exemptions under the ETR will harm other member states’ industries.

### 6.3 *Conclusions and policy options*

As we have shown, the German price guarantees for electricity from renewable energy sources in the EEG and in the KWKG cannot be considered subsidies under

<sup>24</sup> For a dissenting view, see Slotboom (2002), who argues that the German way of supporting renewable energy generation is a subsidy according to Article 1(a)(1)(iv).

WTO law, as there is no financial contribution from the government involved. The German way of promoting renewable energy relies on a mechanism that does not infringe on WTO rules: the grid operators are forced to buy electricity from renewable sources at predetermined prices. The consumers bear the resulting higher costs of producing from renewable sources via their electricity bill. As the money does not pass through the hands of any government body, there is no financial contribution by government, and hence no subsidy. This mechanism may serve as a blueprint for other countries, as it allows governments to promote the production and use of energy from renewable resources without violating WTO law.<sup>25</sup>

However, the tax exemptions and financial transfers under the ETR do infringe upon WTO law. In order to avoid a conflict with other WTO members, the best policy option would be to eliminate these specific subsidies, that is, not to grant certain industries lower tax rates or exemptions from taxes under the ETR. This would also help in achieving the goals of national climate change policies.

## 7. Conclusions

In this article we have analysed the relationship between national climate change policy instruments and WTO rules with particular emphasis on the case of Germany. Our main finding is that national policies whose aim is to reduce greenhouse gases can be brought into compliance with international trade law. This can be accomplished, first, by labelling electricity from renewable resources in various ways. Mandatory labels are subject to WTO rules and must not be used as a protectionist tool; voluntary labels are not subject to WTO rules but could become a subject of trade conflict if the technology of electricity generation were regarded as a characteristic of the traded electricity. In any case, it can be expected that future information requirements about production methods in the energy sector will lead to a differentiation of electricity based on its origin. Whether such discrimination against a homogeneous product is compatible with the concept of 'like products' under WTO law remains an open issue, the relevance of which will increase with cross-border trade in electricity. Second, the design of trading systems for green certificates should consider basic WTO principles if the first attempts made by European countries to set output quotas for energy suppliers become a popular policy tool internationally. Third, our discussion of the scope for applying border tax adjustments to energy taxes has shown that current WTO law does not clearly define the eligibility of this measure. However, the balance of evidence suggests that under certain circumstances, such adjustments could be defended under WTO law. However, for political reasons, it seems advisable to seek multilateral consensus on the interpretation of the relevant WTO provisions.

<sup>25</sup> The European Court of Justice also found that the EEG is not a subsidisation according to European law, since there is no state involvement; and private and public enterprises are treated equally (European Court of Justice, 2001).



Fourth, WTO law leaves room for promoting renewable energy using financial incentives that confer benefits to the producers without violating the ASCM. Hence, climate change policies can even rely on ‘subsidies’ (in the economic sense) without getting into conflict with WTO rules. Fifth, national policies aiming at international environmental protection can always be justified as an exception under Article XX (b) or (g) GATT if the countries do not apply such measures in an arbitrary or discriminatory manner. However, instead of claiming these exceptions to unilateral policy measures, countries should further strive to find solutions to the global climate change problem in the Kyoto process or should devise national policy along the lines discussed in Sections 3–6 of this article. As the case of Germany shows, it is possible to design national climate change policy to be compatible with WTO law. Whether or not the Kyoto Protocol comes into force in the near future, a variety of policy options are available to countries in combating greenhouse gas emissions, and WTO law does not stand in their way.

## References

- Altemöller, F. (1998), ‘Handel und Umwelt im Recht der Welthandelsorganisation WTO’, *Umweltrelevante Streitfälle in der Spruchpraxis zu Artikel III und Artikel XX GATT*: 254, Frankfurt am Main: Lang.
- Althammer, W. and S. Dröge (2003), ‘International Trade and the Environment: the Real Conflicts’, in L. Marsiliani *et al.* (eds.), *Environmental Policy in an International Perspective*, Dordrecht: Kluwer, pp. 151–172.
- Althammer, W., F. Biermann, S. Dröge, and M. Kohlhaas (2001), *Handelsliberalisierung kontra Umweltschutz? Ansätze für eine Stärkung umweltpolitischer Ziele in der Welthandelsordnung*, Berlin: Analytica.
- Bach, S., M. Kohlhaas, B. Meyer, B. Praetorius, and H. Welsch (2002), ‘The Effects of Environmental Fiscal Reform in Germany: A Simulation Study’, *Energy Policy*, 30: 803–811.
- Barker, T. (1997), ‘Limits of the Tax Approach for Mitigating Global Warming’, in J. Hacker and A. Pelchen (eds.), *Goals and Economic Instruments for the Achievement of Global Warming Mitigation in Europe*, Dordrecht: Kluwer, pp. 239–251.
- Baron, R. (1997), ‘Carbon and Energy Taxes in OECD Countries’, in J. Hacker and A. Pelchen (eds.), *Goals and Economic Instruments for the Achievement of Global Warming Mitigation in Europe*, Dordrecht: Kluwer, pp. 207–229.
- Baumol, W. and M. Oates (1971), ‘The Use of Standards and Prices for Environmental Protection’, *Swedish Journal of Economics*, 73: 42–54.
- Benitah, M. (2001), *The Law of Subsidies under the GATT/WTO System*, Dordrecht: Kluwer Law International, pp. 214–218.
- Biermann, F. (2001), ‘The Rising Tide of Green Unilateralism in World Trade Law: Options for Reconciling the Emerging North–South Conflict’, *Journal of World Trade*, 35(3): 421–448.
- Biermann, F. and R. Brohm (2004), ‘Implementing the Kyoto Protocol Without the United States: The Strategic Role of Energy Tax Adjustments at the Border’, *Climate Policy*, 4, June.
- BISD – Basic Instruments and Selected Documents (GATT/WTO) (1997), ‘Decisions, Reports, etc. of the 16th and 17th Sessions. Review Pursuant to Article XVI:5’, Geneva.
- (1987), ‘Report of the GATT Panel. United States: Taxes on Petroleum and Certain Imported Substances’, BISD 34S/136, 17 June.
- Brack, D., M. Grubb, and C. Windram (2000), *International Trade and Climate Change Policies*, London: Earthscan.

- Bräuer, W., M. Stronzik, and A. Michaelowa (2000), 'Die Koexistenz von Zertifikatemärkten für grünen Strom und CO<sub>2</sub>-Emissionen – wer gewinnt und wer verliert?', HWWA Discussion Paper No. 96.
- Buck, M. and R. Verheyen (2001), 'International Trade Law and Climate Change – A Positive Way Forward', FES-Analyse Ökologische Marktwirtschaft, Berlin.
- BMU – Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit (eds.) (2002), 'Entwicklung der Erneuerbaren Energien – aktueller Sachstand', *Umweltpolitik des BMU*, Berlin.
- Chang, S. W. (1997), 'GATting a Green Trade Barrier Eco-Labeling and the WTO Agreement on Technical Barriers to Trade', *Journal of World Trade*, 31(1): 137–159.
- Charnovitz, S. (2002), 'The Law of Environmental "PPMs" in the WTO: Debunking the Myth of Illegality', *The Yale Journal of International Law*, 27(59): 59–110.
- Dam, K. W. (1970), *The GATT: Law and International Economic Organization*, Chicago: University of Chicago Press.
- Demaret, P. and R. Stewardson (1994), 'Border Tax Adjustments under GATT and EC Law and General Implications for Environmental Taxes', *Journal of World Trade*, 28(4): 5–65.
- Dröge, S. (2001), 'Ecological Labelling and the World Trade Organization', *Aussenwirtschaft*, 56(1): 99–122.
- European Commission (1997), 'Energy for the Future: Renewable Sources of Energy', White Paper for a Community Strategy and Action Plan, COM(97)599 final.
- European Court of Justice (2001), Case C-379/98 from 13 March.
- GATT Tuna Panel (1991), 'United States – Restrictions on Imports of Tuna', Report of the Panel, 30 ILM 1594, Geneva.
- Grave, C. (2001), *Der Begriff der Subvention im WTO-Übereinkommen über Subventionen und Ausgleichsmaßnahmen*, Berlin: Duncker & Humblot.
- Howse, R. (1998), 'The Turtles Panel: Another Environmental Disaster in Geneva', *Journal of World Trade*, 32(1): 73–100.
- Howse, R. and E. Tuerk (2001), 'The WTO Impact on Internal Regulations – A Case Study of the Canada-EC Asbestos Dispute', in G. De Búrca and J. Scott (eds.), *The EU and the WTO: Legal and Constitutional Issues*, Oxford: Hart Publishing, pp. 283–328.
- Jackson, J. H. (1989), *The World Trading System: Law and Policy of International Economic Relations*, Cambridge, MA: MIT Press.
- Kim, H.-J. (2000), 'Subsidy, polluter pays principle and financial assistance among countries', *Journal of World Trade*, 34(6): 115–141.
- Kohlhaas, M. (2000), 'The German Ecological Tax Reform', *Economic Studies Program Series 6*, American Institute for Contemporary German Studies, The Johns Hopkins University.
- Kyoto Protocol (1997), *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, New York: United Nations.
- McGovern, E. (2003), *International Trade Regulation*, Exeter: Globefield Press, looseleaf, issue 14.
- Michaelowa, A. (1997), 'Trade and Labelling of Timber and Timber Products', *Aussenwirtschaft*, 52(4): 561–581.
- Mullett, G. (1997), 'ISO 14000: Harmonizing Environmental Standards and Certification Procedures Worldwide', *Minnesota Journal of Global Trade*, 6: 379–400.
- OECD (2001a), *Environmentally Related Taxes in OECD Countries: Issues and Strategies*, Paris: OECD.
- (2001b), *The Polluter-Pays Principle as it Relates to International Trade. A Preliminary Study*, COM/ENV/TD(2001)44, Paris: OECD.
- OECD and IEA (2001), *Dealing with Climate Change. Policies and Measures in IEA Member Countries*, Paris: OECD.
- Pigou, A. C. (1932), *The Economics of Welfare*, London: Macmillan.
- Pitschas, C. (1995), 'GATT/WTO Rules for Border Tax Adjustments and the Proposed European Directive Introducing a Tax on Carbon Dioxide Emissions and Energy', *Georgia Journal of International and Comparative Law*, 24: 479–500.

- Shaw, S. and R. Schwartz (2002), 'Trade and Environment in the WTO: State of Play', *Journal of World Trade*, 36(1): 129–154.
- Slotboom, M. (2002), 'Subsidies in WTO Law and in EC Law – Broad and Narrow Definitions', *Journal of World Trade*, 36(3): 517–542.
- Sucharipa-Behrmann, L. (1994), 'Eco-Labeling Approaches for Tropical Timber: The Austrian Experience', in OECD (ed.), *Life-Cycle Management and Trade*, Paris: OECD, pp. 55–58.
- Tietje, C. (1995), 'Voluntary Eco-Labeling programmes and Questions of State Responsibility in the WTO/GATT Legal System', *Journal of World Trade*, 29(1): 123–157.
- Timpe, C. (1999), 'Gelb, blau, bunt? Welche Farbe hat der Strom?', *Öko-Mitteilungen, Informationen aus dem Institut für angewandte Ökologie e.V.*, Freiburg, No. 3+4: 4–9.
- UNCTAD (1994), 'Eco-Labeling and Market Opportunities for Environmentally Friendly Products', Report of the UNCTAD secretariat (TD/B/WG.6/2), Geneva
- World Trade Institute (2001), 'Appellate Body Report. European Communities – Measures Affecting Asbestos and Asbestos-Containing Products', WorldTradeLaw.net Dispute Settlement Commentary (DSC), <<http://worldtradelaw.net>>.
- WTO Appellate Body (1998), 'United States – Import Prohibition of Certain Shrimp and Shrimp Products', Report of the Appellate Body AB-1998-4. WT/DS58/AB/R, 12 October 1998, 38 *ILM* 118, 1999.
- (2001), 'EC – Measures Affecting Asbestos and Asbestos Containing Products', WT/DS135/AB/R, 12 March.
- WTO-Alcoholic Beverages Panel (1996), 'Report of the Panel, Japan – Taxes on Alcoholic Beverages', WT/DS8/R, WT/DS10/R, WT/DS11/R, 11 July.
- WTO-Committee on Trade and Environment CTE (1995), 'Negotiating History of Footnote 61 of the Agreement on Subsidies and Countervailing Measures', Note by the Secretariat, WT/CTE/W/16.
- WTO-CTE (1997), 'Taxes and Charges for Environmental Purposes-Border Tax Adjustment', Note by the Secretariat, WT/CTE/W/47, 2 May.
- (2000), 'Information Relevant to the Consideration of the Market Access Effects of Eco-Labeling Schemes', Note by the Secretariat, WT/CTE/W/150, 29 June.
- WTO-Export Restraints (2001), 'Report of the Panel on United States – Measures Treating Exports Restraints as Subsidies', WT/DS194/R.

## Appendix 1: German laws related to climate change covered in this article

- The *Ecological Tax Reform* (ETR) increased taxes on electricity and fossil fuels on a yearly basis from 1999 to 2003.
- The *Renewable Energies Act* (Erneuerbare-Energien-Gesetz (EEG)) and the *Co-generation Act* (Kraft-Wärme-Kopplungsgesetz (KWKG)) use price guarantees or price mark-ups as their main policy instrument to save energy or use it more efficiently.
- The *Großfeuerungsanlagenverordnung* (GFAVO) sets emission standards for sulphur dioxide (SO<sub>2</sub>), nitrogen oxide (NO<sub>x</sub>), dust, carbon monoxide, fluorides and chlorides in large combustion plants based on coal, oil and natural gas.
- The *Energieverbrauchskennzeichnungsgesetz* (EnVKG) and the *Energieverbrauchs kennzeichnungsverordnung* (EnVKVO) specify rules concerning energy consumption in the use and production of products and labelling requirements.

- The *Energieeinsparungsgesetz* (EnEG) and the *Energieeinsparverordnung* (EnEV) regulate the saving of energy and the insulation of buildings, respectively.
- The *Energiewirtschaftsgesetz* (EnWG) regulates electricity and gas supplies – but is not primarily concerned with environmental goals.